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IS 10393 (1982): electrical connector for tractor trailer jumper cable [TED 22: Transport Tractors and Trailers]



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“Knowledge is such a treasure which cannot be stolen”

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IS : 10393 - 1982

Indian Standard
SPECIFICATION FOR
ELECTRICAL CONNECTOR FOR
TRACTOR-TRAILER JUMPER CABLE

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NEW DELHI 110002

Indian Standard

SPECIFICATION FOR ELECTRICAL CONNECTOR FOR TRACTOR-TRAILER JUMPER CABLE

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Indian Standard

SPECIFICATION FOR ELECTRICAL CONNECTOR FOR TRACTOR-TRAILER JUMPER CABLE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 29 November 1982, after the draft finalized by the Transport Tractors and Trailers Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 For road safety, the proper functioning of signalling lights fitted on towing vehicles and trailers is of paramount concern. This safety aspect can be ensured by good connectors which leads to the development of this standard.

0.3 This standard is based on SAE J560b 'Seven-conductor electrical connector for truck-trailer jumper cable' published by the Society of Automobile Engineers, USA.

1. SCOPE

1.1 This standard specifies the dimensions and minimum design requirements of the cable plug and receptacle to achieve interchangeability with electrical connectors of different manufacture.

2. TERMINOLOGY

2.1 For the purpose of this standard the definitions given in IS : 7774 (Part I)-1975* and IS : 7774 (Part II)-1975† and the following shall apply.

2.2 Receptacle — A device consisting of the connector socket, housing and a cover which latches the male plug in place. The socket contains the male contacts (*see* Fig. 1).

*Glossary of terms relating to transport tractors and trailers: Part I Basic terms.

†Glossary of terms relating to transport tractors and trailers: Part II Dimensions and weights.

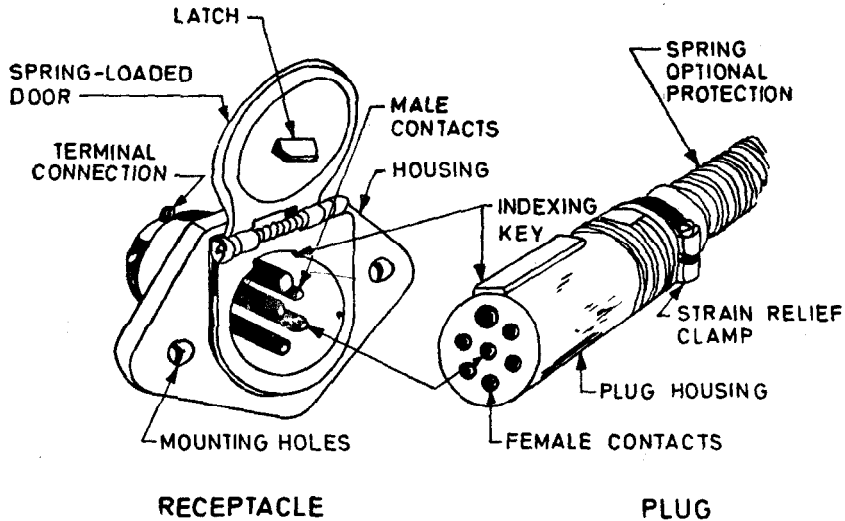


FIG. 1 SEVEN CONDUCTOR ELECTRICAL CONNECTOR

2.3 Cable Plug — A device, cylindrical in shape and having an index key for ease of assembly, is attached to the end of the electric jumper cable. The cable plug houses the female contacts (*see* Fig. 1).

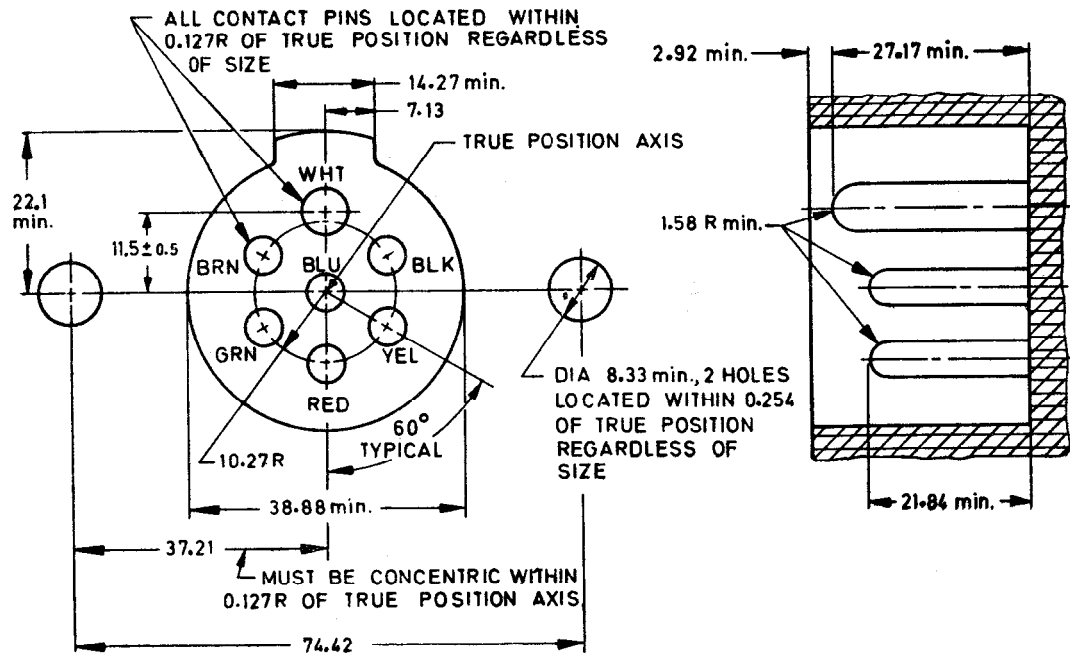
3. GENERAL REQUIREMENTS

3.1 Wiring Circuits

3.1.1 The function and colour code of each circuit shall be as shown in Table 1. The location of each circuit shall be as shown in Fig. 2 and and 3.

3.2 Receptacle

3.2.1 Receptacle socket dimension shall be as shown in Fig. 2. The receptacle shall be provided with a weathertight cover attached to the housing or connector socket, and provided with a latching device which shall make engagement with the back and of the index key on the cable plug. The receptacle cover shall be so constructed that it will latch properly without interference to a cable plug, regardless of the plug's length, when such a plug is properly engaged with the connector socket.

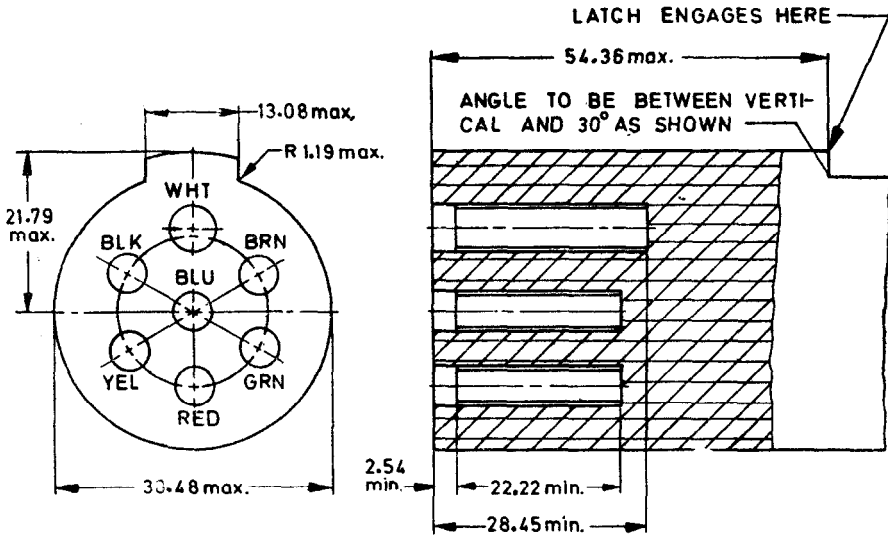


NOTES —

1. External contact *WHT* $\phi 6.35 \begin{smallmatrix} +0.015 \\ -0.127 \end{smallmatrix}$
2. All other external contacts are $\phi 4.75 \begin{smallmatrix} +0.015 \\ -0.127 \end{smallmatrix}$
3. The contacts are identified clockwise when looking in to the open end of the socket.

All dimensions in millimetres.

FIG. 2 RECEPTACLE SOCKET



NOTE — The contacts are identified counter clockwise when looking in to the open end of the cable plug.

All dimensions in millimetres.

FIG. 3 CABLE PLUG

TABLE 1 WIRING SOCKETS

(Clause 3.1.1)

CONDUCTOR IDENTIFICATION	WIRE COLOUR	LAMP AND SIGNAL CIRCUIT
WHT	White	Ground return to towing vehicle
BLK	Black	Clearance, side-marker and identification lamps
YEL	Yellow	Left-hand turn signal and hazard signal
RED	Red	Stop lamps and antiwheel lock devices
GRN	Green	Right-hand turn signal and hazard signal
BRN	Brown	Tail and licence plate lamps
BLU	Blue	Auxiliary

3.2.2 Male contacts in the receptacle socket may be made of solid or split construction.

3.3 Cable Plug

3.3.1 The dimensions of the cable plug shall be as shown in Fig. 3.

3.3.2 The force required to connect or disconnect a new cable plug and a new receptacle socket from the same manufacturer shall not exceed 222 N.

3.3.3 An assemble cable plug and a trailer jumper cable shall be so constructed that they will not be damaged by resisting a straight pull of 667 N applied to the jumper cable. All cable plugs shall incorporate a strain relief device to ease the tension on the electrical connections between the female contacts and the cable conductors.

3.3.4 Female contacts in the cable plug shall be spring-loaded radially in order to maintain proper contact for interchangeability.

3.4 All electrical current carrying parts of the receptacle socket and cable plug shall be made of a copper alloy. Insulating materials shall not fracture during mating and removal of the plug from the receptacle at 40°C and shall not deform at 82°C.

3.5 The receptacle socket and cable plug shall be so constructed that the 'WHT' terminal shall accommodate at least a No. 8 gauge wire and all other terminals at least a No. 10 gauge wire.

4. PERFORMANCE REQUIREMENTS

4.1 The performance requirements shall be in accordance with 4 of IS : 9895-1981*.

*Electrical connections between towing vehicles and trailers — Test methods and requirements.